PLACE AND DIGITAL MEDIA

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SUMMARY

As interactors we often allude to a sense of presence, of “being there,” when experiencing interactive artifacts. Digital technologies can create a sense of presence within a synthetic environment, that of being in a technologically mediated space. As a result, ideas of “space” and “place” are fundamental to the use of digital media. Related metaphors pervade our language and use of technology; we explore virtual worlds, surf online, and chat in rooms.

The field of humanist geography can be used to examine digital media practice across several domains. Exploring the concept of place in relationship to a video game, website, or mixed reality environments question contemporary definitions of presence. As a result, a theoretical foundation for the design of artifacts may create a strong sense of place, and thus enhance our understanding of presence.

CHAPTER 1: INTRODUCTION

Digital media artifacts are inherently spatial. Although human relationship to place is a complex phenomenon, current development in digital media practice is limited. Understanding concepts of place, presence, and immersion from a critical humanist perspective provides alternative methods for the comprehension and design of digital media artifacts beyond techniques commonly deployed in Virtual Reality (VR) practice and research focused on the concept of presence.

The writings of humanist geographer Yi-Fu Tuan focus on the human experience of place and its representation in traditional media. These teachings explain the “dynamic interconnection of structural, personal, social and cultural elements” (Reno 184) of human experience in real and virtual places. In addition, Tuan’s interest in the connection between places and works of traditional media point to design possibilities for the digital medium.

It is important to understand place and its relationship to existing definitions of presence and immersion. A person’s relationship to their environment and their perceptions of the world are based on a combination of physical, cognitive, and social phenomena.

A critical survey of place representations in the digital medium draws from related themes in exemplary artifacts. Concepts from the fields of geography, media studies, and architecture allow examination of artifacts in three domains of digital media design practice: Virtual Environments (VE), the internet, and Mixed Reality (MR).

Screen-based virtual environments created with the use of 3D modeling techniques rely on visual imagery to represent place. These environments are contemporary implementations of the Albertian window, a visual representation constructed with the rules of linear perspective to create the illusion of depth. These illusionary depictions aim to represent place as if it truly existed on the "other side" of a television screen.

One example of a screen based VE is the *Grand Theft Auto* (Rockstar Grand Theft Auto 3: Vice City) series of console video games. These games allow players to navigate and explore a satirized American landscape. The *GTA* series goes beyond the creation of a visual 3D space by employing additional techniques which instill its urban virtual environment with a strong sense of place.

Similarly, the internet is often understood as a space in the popular imagination and in contemporary use. The sense of movement *through* information that the internet affords and the social experiences provided online help to define the internet as space and web sites as places. Navigation and social interactions are the primary elements that define the internet as a space.

When *Google* released their search technology in the mid-nineties they transformed the way online space was navigated. Since then, *Google* has continued to develop online tools and software which aim to "make the world's information accessible." *Google's* work has a major influence in the ways internet space is experienced as place.

Mixed reality combines techniques of physical interfaces, immersive environments, and social action. Disney Quest's virtual reality ride/ game, *Pirates of the Caribbean: Battle*

for Buccaneer Gold (Imagineering), combines these elements to create a mixed reality environment which creates a strong sense of place for its visitors.

Contextualizing the techniques used in the artifacts cited above within the field of human geography yields a deep understanding of place in the digital medium. From this exercise, new insights into the perception and design of digital artifacts will emerge.

Challenging spatial perception in existing research questions the contemporary focus of representing places through visual and physical attributes. Humanist geography explains experience as a complex phenomenon and provides intellectual techniques for inquiry into our relationship to places, real and virtual. Analysis of existing artifacts from the vantage point of humanist geography broadens our understanding of the design space of digital media.

CHAPTER 2: FOUNDATIONS

Inclusion of humanist geography's concept of place into contemporary presence research opens new possibilities for the perception and design of digital media artifacts. Clear definitions of immersion, presence, and place are required to allow this project.

2.1 Immersion

Immersion is the extent to which physical attributes of a medium engage a person's senses. For example, a large screen provides a display that visually immerses a person more than a small square frame television screen. Similarly, a set of surround sound speakers envelops a person in sound and is therefore more immersive than a two-speaker, stereo setup. Immersion can be explained as the physical envelopment of a person's senses within their immediate surroundings.

> [Immersion is] what the technology delivers from an objective point of view. The more that a system delivers displays and tracking that preserves fidelity in relation to their equivalent real-world sensory modalities, the more that it is 'immersive'
>
> -M. Slater, "A *Note on Presence Terminology"*

Immersion plays an important part in presence, though they are not proportional. Virtual Reality (VR) and similar immersive technologies which seek to become transparent (Bolter and Grusin 66) may never achieve a sense of non-mediation for their users. Immersive practices help express a culture's desire for synthetic, non-mediated experiences. Figure 1 exhibits an increasing amount of immersion with increasing sensory stimuli provided by a radio (audio only), television (audio and video), and finally a home theater (larger display and numerous speakers). Movie theaters allow the

audience to practice this cultural desire as supported by the level of immersion encouraged by traditional movie theaters.

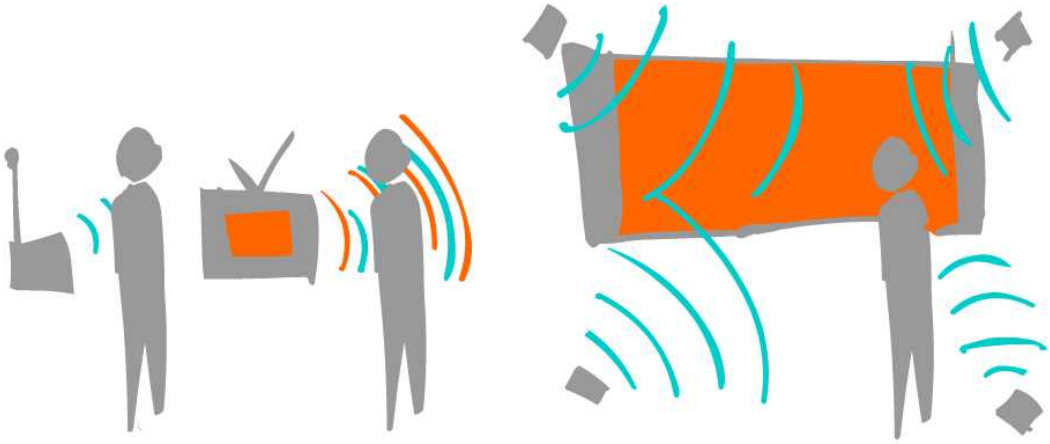


Figure 1 Increasing Immersion.

Whether completely immersive VR will ever be achieved is questionable. Nonetheless, the strong cultural desire for complete immersion requires critique. Immersive technologies continue to be developed with the intent of erasing the frame (Bolter and Grusin 66). However, these artifacts obsessively focus on the physical aspects of framing. VR experiences will always be framed by time. The notion of a full life cycle, immersive experiment as explored in the film *The Truman* Show (Weir) comes closest to a truly immersive mediated experience, one in which the subject would not be able to distinguish from reality since mediated immersion becomes their life experience.

2.2 Presence

Presence in contemporary VR research is defined in two ways. First as the subjective sense of ‘being in the world’. Second it is defined as a virtual environment that allows for the successful completion of a given task. Methods used to quantify presence depend on which presence definition is applied. The former definition is gauged by measurement of physiological reactions to elements in a virtual environment (Slater 435) or Likert scale surveys completed by test subjects after interacting with an artifact (Witmer and Singer 225). The latter definition is measured as the level of success of the required task.

These methods are primarily limited to the sensorial perception of physical space and objects within that space. This limited understanding of place may be suitable for specific goals of mediated environments, such as collaborative tasks, operator training, or even phobia therapy; however, a humanist interested in cultural practice and the expressive possibilities of the digital medium, these definitions and methodologies fall short of providing a thorough understanding of sense of place in digital media.

Interestingly, research studies on presence reveal inconsistencies such as when fighter pilots adrenaline levels are reported higher in VR simulations than in actual combat (CITE) or when users’ report higher levels of presence in a VR simulation than in their daily life (McKinnon and North 254); further putting into question existing definition and methodologies in presence research.

Some researchers are pushing for the re-definition of presence to include social and cognitive processes as those included in humanist geography’s definition of place. David Nunez calls for a “cognitive presence” (Nunez "Cognitive Presence as a Unified Concept

of Virtual Reality Effectiveness" 115). His studies expose the ability of text-based (Nunez "A Direct Comparison of Presence Levels in Text-Based and Graphics-Based Virtual Environments" 53) and cartoon-like visual environments (Nunez "How Is Presence in Non-Immersive, Non-Realistic Virtual Environments Possible?" 83) to illicit high levels of presence. Similarly, Paul Dourish examines ways cultural factors influence experiences of place (Dourish). Luigina Ciolfi uses Tuan's theories of place and experience to influence design and development of ubiquitous computing in a museum setting (Ciolfi and Bannon 9) .

Inclusion of place as defined below into understanding contemporary presence research can open new possibilities for the understanding and design of digital media artifacts.

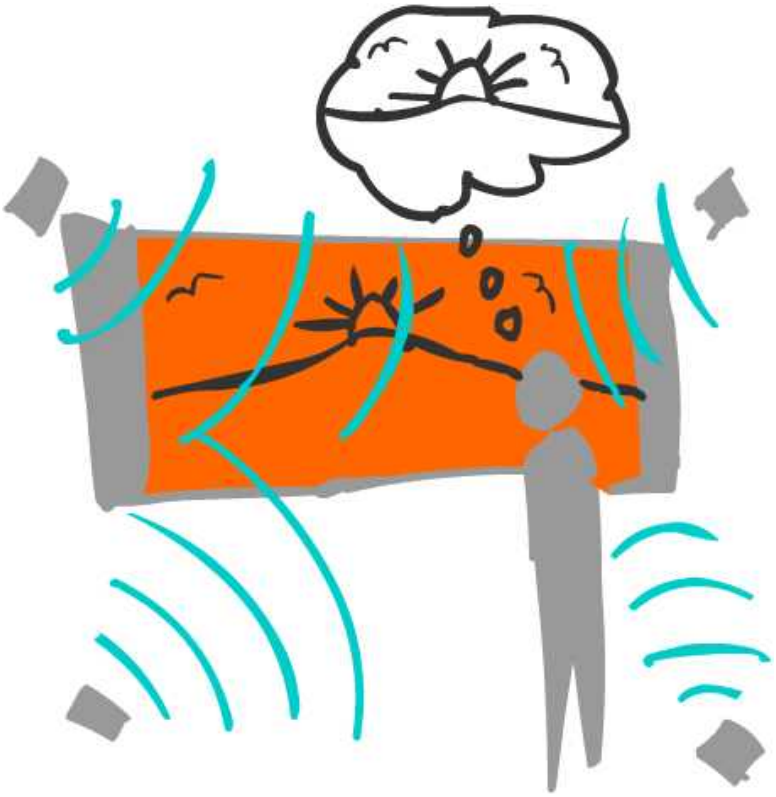


Figure 2 Presence

2.3 Place

The equation “place = space + meaning” (Harrison and Dourish 1) provides a starting point to understanding place. Space is the abstract perception of the world around us and place is space as lived and experienced. Where space refers to abstract geometrical extension and location, place describes our experience of being in the world and investing a physical location or setting with meaning, memories and feeling (Casey The Fate of Place: A Philosophical History 336).

Tuan, whose work focuses on the human experiences and connections to places, provides a solid grounding for understanding the concept of place. Tuan’s “experiential perspective” describes place as created by the process of human experience in a physical space.

This process is explained through four layers of human experience: physical, social, personal, and cultural (Tuan Space and Place: The Perspective of Experience 66). The physical layer is made up of our sensory and haptic experience. The social layer is related to our interactions with other beings. The personal layer is created by our unique memories and expectations while the cultural layer is a result of culturally accepted modes of understanding and perceiving a place.

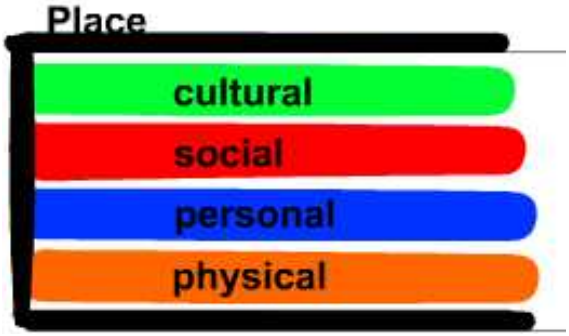


Figure 3 Place Is Layered

Tuan also describes mediated artifacts as places: “artworks such as a painting, photograph, poem, story, movie, dance, or musical composition can also be a place – a virtual place. Isn’t it true that we pause before them, rest in them…” (Tuan Place, Art, and Self 3). Similarly, geographer Edward S. Casey writes about the ability of landscape painting and cartography to transcend representation and to become presentation by a method he calls ‘re-implacement’ (Casey Representing Place: Landscape Painting & Maps 246). Connecting mediated artifacts as places further encourages the implementation of Tuan’s theories for understanding digital media whose artifacts can be both spatial and representational.

Digital media can represent and create place. Screen-based artifacts represent place in ways similar to the practices of film and television. *GTA* heavily borrows techniques from existing television shows and movies to create a sense of place. Mobile and ubiquitous technologies create place in ways related to the practice of architecture. Digital media, like architecture, can alter human relationship in existing places; thus intervening in a place. Ciolfi’s work in the development of interactive museum exhibits intervenes in existing places, altering visitor relationship to a museum setting (Ciolfi and Bannon 13). Mixed Reality creates place by combining elements of representation and intervention in an artifact.

Figure 4 Place is Personal, Cultural, Physical, and Social

Sense of place has been heavily studied by humanist geographers. However, reference to this concept in the development of digital media is scarce. Enhancing existing presence research with a thorough comprehension of place can provide a deeper palette of possibilities for the digital media designer.

2.4 Place in Traditional Media

Many artifacts of traditional media such as paintings, maps, novels, and films employ elements of place in their representations. Artists that include personal, cultural, and social elements create rich and compelling places. Studying examples of such artifacts can provide techniques for implementing the elements of place in the digital realm.

Figure 5 Community Map

The artist of this map/painting includes personal and cultural elements of social life in addition to the physical layout of a town. This technique creates a sense of place by exposing a town's social make up as well as its physical layout. Emphasizing the communal elements of a place strengthen this representation.

Social experience is also fundamental to folk music. These lyrics represent a Manhattan street corner imbued with a rich sense of social history:

They were digging a new foundation in Manhattan
And they discovered a slave cemetery there…

…Except go back to that corner in Manhattan
And dig deeper, dig deeper this time

Down beneath the impossible pain of our history
Beneath unknown bones
Beneath the bedrock of the mystery
Beneath the sewage systems and the PATH train
Beneath the cobblestones and the water mains
Beneath the traffic of friendships and street deals
Beneath the screeching of kamikaze cab wheels
Beneath everything I can think of to think about
Beneath it all, beneath all get out

-Ani DiFranco, *Fuel*

Pedestrian urban imagery evokes personal memories of a contemporary urban setting intertwined with subterranean elements. This representation evokes a strong sense of place by its combination of physical objects with elements of social and political history.

A Manhattan street corner can be contrasted with this pre-industrial Latin American village:

> At that time Macondo was a village of twenty adobe houses, built on the bank of a river of clear water that ran along a bed of polished stones, which were white and enormous, like prehistoric eggs.
>
> -Gabriel Garcia-Marquez, *One Hundred Years of Solitude*

Metaphor and simile evoke anticipation at the beginning of this novel. Culturally powerful imaginary of water, stones, and eggs create a sense of place and purity.

Representations that contain any of the four elements as defined by humanist geographer Tuan create place. Digital media designers seeking to create engaging and expressive spatial artifacts can employ these elements in order to illicit a strong sense of place.

CHAPTER 3: URBAN PLACE IN VIDEO GAMES

The *Grand Theft Auto* (*GTA*) franchise of console and PC games offers a successful example in the creation of place in contemporary video games. Working from the standard interfaces found on contemporary PCs and consoles, the developers employ cultural metaphors of urban place to support the player's presence within their virtual worlds. The physical agency of driving and controlling a car stereo recreates the personal experiences of navigation which further contributes to the creation of place. In this section I will focus on *GTA* game *Vice City* (Rockstar Grand Theft Auto 3: Vice City).

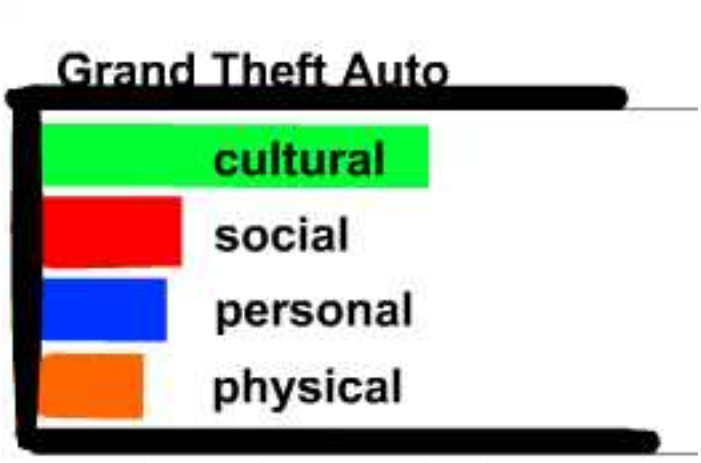


Figure 6 Elements of Place in GTA

In *Grand Theft Auto*, as with most contemporary videogames, space is defined in the Newtonian/Cartesian sense; an absolute grid within which objects are located and events occur (Curry 5). This is a popular definition of space, intuitively understood in our contemporary world. The development of computer graphics is a visual implementation of this definition through the use of Cartesian geometry created in virtual space and rendered onto flat screens.

GTA represents space on the screen in two ways. Primarily through 3D graphics, a method of visualization is derived from landscape painting and perspective drawing. Space is also represented through cartographic images that help players navigate their avatars through the environment. These two methods are based on the Newtonian definition of space as an absolute grid and are part of this lineage of western spatial representation.

The history of spatial representation in videogames (Fernandez-Vara, Zagal and Mateas 8) shows an evolution from abstract 2D spaces constrained to the screen as found in early games such as Pac-Man (Namco) to 3D representation which grow beyond the screen as in contemporary game worlds such as Liberty City in *GTA 3 (Rockstar Grand Theft Auto 3)*. 3D in gaming is a full realization of Newtonian space and remains the dominant representation in games today. The two primary forms of 3D space are in first and third person points of view. The conventions of spatial navigation of 3D, third person games were established in the mid 1990s with *Mario 64* (Nintendo) from which the *GTA* series appears to have taken its cues from. In Mario 64, levels are entered by jumping through 2D images in the 3D world, a metaphor for the evolution in graphics technology the game represented (figure 6).

Figures 7 Screenshots of *Mario64*

In video games we can perceive space as the abstract conception implemented in the environment, in this case the notion of Newtonian 3D space. Place, on the other hand, is the specific game world we experience such as *Mario 64's Mushroom Kingdom* or *Grand Theft Auto's* Liberty City. *GTA* creates authentic experiences of specific cities as opposed to generic urban locales. This specificity and how it is achieved is the focus of this section.

What is the process of representing real American cities as places in the world of *GTA*? How are experiences like driving down Ocean Drive recreated in the virtual city? The ways in which *GTA* accomplishes this feat is central to the success of their game worlds. If players do not experience presence, a sense of being in these cities, in the place of *Vice City*, then the act of transgressing the social norms will not be as appealing to players. The pleasure of the game's so-called "open play" likewise depends on a richness of spatial meaning. *GTA*'s success is the achievement of place for the player.

In third person perspective games such as *GTA*, presence is achieved by the embodiment of Tommy Vercetti, the player's avatar, in the virtual world. The player's

agency in that world is expressed through driving cars, going into buildings, engaging in gang fights, and so forth which engage a player's active creation of belief (Murray 110) . *GTA* and most contemporary videogames employ similar techniques for representing 3D space. The rendering of a world in linear perspective visually immerses the player in the game's action and map screens are used to navigate the space. These representations are based on notions of Newtonian space.

While research on techniques for creating presence in general Newtonian spaces (such as general cities or bedrooms) is common, inquiry into the role of specific places is rare (Turner and Turner 6). Questions of how different cities each create unique experiences of place go mostly unanswered. This void points to a focus on the generalities of spatial experience in lieu of creating presence in specific places, leaving out an important element of our lived geographic experiences.

Game developers parallel this trend, providing players with an infinite amount of general game spaces. Setting *GTA* apart is its ability to create compelling fictional places based on real American cities. These representations, which exploit the power of place, combine with a player's agency in the game world and contribute to a high level of presence for the player.

3.1 Perceiving the Urban Landscape

How do we perceive the cities we inhabit? *GTA* creates a sense of presence in an urban landscape through a fundamental understanding of how we perceive the very real cities we live in. Tuan describes this process of understanding human perception of our cities on two levels (Tuan Space and Place: The Perspective of Experience 224). The first

level is through our intimate daily experiences: the streets we drive on our way to work, the corner on which we find our favorite grocery store. These are specific nuances that are as unique as the individuals who hold them. They are the mental maps we maintain that allow us to function and understand where we live (Lynch 7). The second level of perception is through the abstract notion of a particular city as symbol or image. This image is created by the popular imagination through television, news, radio, and other media. These cultural perceptions and representations of place affect our personal relationship to a given city.

Designing virtual cities that represent real cities for the first level of perception is difficult and unproductive. It is an impossible task to capture the minute details of a real city such that a wide audience of players can relate their personal understanding of that place to its virtual equivalent. The time and energy it would take to map out an entire city's physical nuances would be a never ending project — it would require an absolute replica of the city at any, or every, given moment in time.

When players find themselves in a familiar virtual city, they often attempt to visit the places they know. Inevitably, failure to find a favorite coffee shop results in a breaking down of immersion for the player and makes the virtual environment less meaningful. Likewise, for those who are unfamiliar with a city, nuances such as these would prove less meaningful. Placing such a great emphasis on mimicking the real city compromises the experience for the player in the virtual city when their specific knowledge of a real place goes unrewarded.

The second level, symbolic representation, is where the *GTA* series excels. *Vice City* is built on the cultural perceptions of Miami, Florida. *GTA* builds its virtual worlds from the

perceptions of these cities' as they exist in popular culture, instilling a sense of presence in fictional, yet familiar, places. In doing so, *GTA* brings these virtual environments to life.

If symbolic elements are more significant than bricks-and-mortar representations in creating presence, to what extent are these elements successfully combined? Understanding Miami as a symbolic place made up of cultural and social elements allows Rockstar to create the compelling, playable world of *Vice City*. A close look at the real and symbolic elements of a virtual city in *GTA* will expose the importance of creating virtual worlds as re-created places that attenuate to a person's cultural expectation of a city with an emphasis on how cities are perceived rather than on their objective realities.

3.2 Mediated City: Miami and Vice City

Vice City's recreation of Miami echoes the cultural perception of the city as represented in 1980s film and television. This symbol of the violent paradise existing between the streets of New York and the jungles of South America present Miami as a glamorous tropical gateway. Miami is a city teeming with guns and money, straddling the under-developed manufacturing countries of illegal narcotics and the over-developed cities that consume these goods. The fascination with this urban landscape exploded in the 1980s due to high profile developments of corrupt police officers involved in the drug trade, an era of celebrity cartel bosses, as well as highway tourist slayings.

Creating a virtual environment based on the popular image of the city of Miami as described above, *GTA* exploits the sensibilities of the player living in a media-saturated world. Influenced by the mobster movie *Scarface* (DePalma) , the television show *Miami Vice* (Yerkovich), and news media coverage of Miami in the 1980s*, Vice City* is a

composite of the imagery from these earlier media artifacts; a media representation based on previous mediated representations of the city of Miami.

Miami is not only the land of guns, drugs, and money; it is also the city of immigrants and transplants. In *Vice City* we embody the character of Tommy Vercetti upon his arrival in town seeking both revenge and fortune in the drug trade. Tommy is a composite of *Miami Vice's* Ricardo Tubbs, the New York detective seeking revenge for the murder of his brother in Miami, and *Scarface's* Tony Montana, the Cuban Mariel refugee seeking fortune far from Castro's communism. All three characters are found arriving into town in the opening shots of their respective mediums.

Vice City exaggerates the symbol and myth of Miami to the point of satire, making the filmic space of *Scarface* and the televisual space of *Miami Vice* playable. Although some elements of the layout of *Vice City* echo the real layout of Miami, they are not implemented to create immersion and serve only as satirical antidotes for those familiar with the real city's streets. Upon his initial playing of the game it didn't take long for Klainbaum, a Miami resident for over 12 years, to abandon any attempts at finding personally meaningful landmarks on his Ferrari. The overall urban layout mimics that of Miami, connecting the glamorous beaches to the mainland neighborhoods of Little Havana and Little Haiti, as well as the skyscrapers of downtown.

Game play in *Vice City* begins in Tommy's apartment located across from Ocean Beach, the game's recreation of Ocean Drive. This is the prime destination in South Beach with beach front art deco hotels and bars. The location of Tommy's apartment bears resemblance with the same spot which Tony Montana narrowly avoided death by chainsaw in *Scarface*. Similarly, the Vercetti Mansion is a close replica of Tony

Montana's mansion, complete with grand staircase, red carpets and walls, as well as stacks of surveillance monitors in the office. The mansion is appropriately located in Starfish Island between the mainland and the beach. Starfish Island is the stand-in for the real Star and Fisher Islands, where celebrities like Madonna, Shaqueil O'Neil, and Sylvester Stallone have resided in recent years. Adding to the symbol of glamour and violence in *Vice City*, Escobar International Airport is named by combining one of the most famous drug lords in recent times, Pablo Escobar with the real Miami International Airport.

Figure 8 Map of Vice City

Figure 9 Map of Miami, FL

Figure 10 Still from *Miami Vice*

Figure 11 Box Art for *GTA: Vice City*

Figure 12 Screenshot of *GTA: Vice City*

Creating place by utilizing a player's expectations of a virtual environment, called "priming" (Nunez and Blake 107), demonstrates the importance of cognitive psychology in creating virtual worlds. *GTA* primes its players for immersion in *Vice City* first by developing a virtual environment based on pre-existing imagery of popular culture. Second, it primes its players through the marketing and advertising materials which familiarize the players with a consistent presentation of the game. Rockstar Games adamantly self-publishes all materials related to their games, ensuring consistency of place representations and proper priming of their players. Using these two techniques, expectations of what players will find in *Vice City* are established well before the game is loaded on their consoles. When a player's expectations of a virtual environment are met, they experience a heightened sense of place within that environment.

Other *GTA* techniques borrowed from Hollywood filmmaking include spatial overlapping and off screen audio. By presenting a scene first through a wide shot and then through a close-up, the characters in the close-up are contextualized within an environment. In *Vice City*, the opening shots of the landscape place the game action in a city very similar to Miami. This is the same technique exhibited in the *Miami Vice* TV series with its famous introductory credit sequence. Off screen audio is also commonly used to create televisual and filmic space. Sounds created from people and objects outside of the frame enlarge a scene and help place it in a spatial context. *Vice City's* use of sirens, CB radios, and random pedestrian conversation help establish a sense of presence in a living city for the player. The use of Latin and Caribbean accents in the conversations contributes to a sense of cultural presence.

Comparing *Vice City* to the *Miami Vice* videogame (Entertainment) exposes two distinct games derived from the same source material. While *Vice City* seeks to create an

engaging virtual environment, *Miami Vice* places the player in an episode of the popular television show. *Miami Vice* presents a linear storyline with sections adapted for game play in specific scenarios; the drug lord mansion, an art gallery, and the port. On the other hand, *Vice City* is an amalgam of similar locales each imbued with a life of their own. Traversing the levels of *Miami Vice* is monotonous; each level is a re-skinned rendition of the others. *Vice City* achieves a level of authenticity in its implementation through the attention to detail employed making each environment rich and compelling. *Vice City* allows for exploration and rewards players with surprises all which are consistent with the overall perception of the city; whereas *Miami Vice* does not allow players to stray from the linear game path, making for a constricting experience. This constriction decreases the level of presence in a virtual environment as players cannot freely navigate within the perceived physical space.

Miami Vice the videogame also places emphasis on the ability to embody the popular characters, Crocket and Tubbs, from the original show. A unique game play feature allows players to dynamically switch between these two characters to best match the skills of a given situation; Tubbs is stronger and can knock down doors, Crocket is agile and can climb walls. By avoiding the use of pre-existing characters, *Vice City* emphasizes the exploration of the virtual environment as the selling point of the game. This exploration encourages players to inhabit the city in unique ways and promotes agency.

While many licensed games such as *Miami Vice* implement plot lines and characters from their source artifacts, *Vice City* places emphasis squarely on the virtual environment. For *GTA*, drawing players into the game is primarily about creating a rich and open ended game world and allowing players to inhabit it. This technique is

compared with that of the *Miami Vice* game of recreating a series of plot events and allowing the player to embody the celebrity characters as these pre-defined plots are executed.

The success of *GTA* points away from the use of pre-canned narratives and personalities as successful elements in videogames to those of compelling spaces and engagement with processes. Although a linear storyline is available in *Vice City*, it is the rich world and the ability to explore it that draws players in. This exposes a productive method for game design of creating compelling and engaging virtual places, aligned with a player's expectations of that environment.

3.3 Driving as Immersion

A powerful technique for the creation of place in *GTA* is the re-creation of driving as a mediating experience. In the developed world the urban landscape is predominantly experienced through the distancing mediation of the automobile. A car's windshield can be compared to the television and computer screens by which we experience and view much contemporary interaction; separating passengers from the world outside creates a separate space within the automobile. Allowing players to switch of radio stations greatly aids in the creation of place for the player. As Mitchell suggests, driving through a city and flipping through the radio tuner defines the contemporary experience of the American urban landscape. The re-creation of driving and simulated radio in *GTA* promotes the personal act of driving through and urban environment, thus promoting a sense of place in the game world.

Furthermore, the content of the radio stations contribute to the mood and era *GTA* is trying to establish for its players. In *Vice City*, 80s pop music further place the player in their cities. Interestingly, the television show *Miami Vice* was influenced by the popularity of MTV's mixture of music and images to create moods. *Miami Vice's* use of popular music as ambient soundtrack proved to be a cutting edge implementation in television of the time. Tuan describes the audio as a sense-medium that "encompasses and surrounds" (Tuan Space and Place: The Perspective of Experience 8) the listener, immersing them in the sounds of a place. This has a distinct effect as the distancing that visual media afford. As opposed to imagery, sound comes to us from all directions, engulfing the listener. In addition, music can spark memories in people. By using music from a specific era, *GTA* further immerses the player in the time and place of its setting.

3.4 Possible Avenues

Given contemporary developments in research and technology, several potential avenues exist for further enhancing the experience of place in video games. Current research into the procedural development of environments can be implemented to mimic the organic development of cities. For example, demographic information can be used to procedurally populate regions and neighborhoods of a virtual environment depending on events during game play. Artificial Intelligence techniques for the non-player characters in the game (NPCs) can provide a strong element of simulated social space in the game. Similarly, making *GTA* an online game would create a strong social component to the game. Also, games can query online information form news outlets regarding up to date elements of a city such as news and weather reports. Events and weather can be

included or alluded to in the game environment, aligning it with the real world places represented by the virtual environment.

GTA can be understood as a critique as well as an affirmation of the influence of media on people in the developed world. In our increasingly mediated society, what is perceived as real and what is mediated are notions which are becoming blurred. Rockstar's ability to create a compelling place lies in its awareness of these contemporary cultural shifts. *GTA* is designed with an understanding of the layered representations that define our media-saturated world, and influence perceptions of place. Rockstar has created a strong sense of place by the inclusion of cultural as well as personal elements of urban environments and contemporary life.

In *GTA*, players are present in a hyper-violent American urban landscape. This compelling and controversial virtual environment is a poignant satire of American popular culture. Lost in the many denunciations of the game's violence is recognition of the sophisticated symbolic spatial representations that pervade Vice City. The power of symbolic spatial representation and the sophisticated sense of place created by *GTA* cannot be overlooked.

CHAPTER 4: INTERNET PLACE

Beginning with the telegraph in the early 1800s, the ability to transmit electrical signals across large distances has had a profound effect on our perception of distance. The telephone, television, and most recently the internet are all variants of such space-compressing technologies. The networking of computers across geographical distances and the rapid transfer of data across these networks has significantly altered communication and business interactions. From its early conception as an Advanced Research Projects Agency (ARPA) initiative intended to decentralize and expedite the transmission of information, the internet has been perceived as a unique space that exists apart from our physical reality.

On a daily level, our use of language reflects our perception of a computer network as a space. We refer to interacting with a single, un-networked computer as that of being ‘on’ it; however, when accessing information from remote machine we are suddenly ‘in’ it. Our relationship is altered whether we are accessing information on a co-located machine via a standard interface or from a remote one through a network. In addition, users of the ARPANET created the first online community with their regular exchange of messages from their networked computers. As computer networking becomes accessible to many computer users, the global network of the internet is increasingly understood as a space itself.

Agency is a way that interacting with the internet creates presence AWK WORDING. Specifically, the agency of navigation, motion, and exploration define our primary interactions in the internet. Tuan defines space as a medium in which we are able to move through (Tuan Space and Place: The Perspective of Experience 13). In the

internet's case, this motion is through a collection of encyclopedic data (Manovich 226). We "surf" the web with browsers named Navigator and Explorer, which connote tools for motion through space. As a result, most online artifacts are designed around metaphors that focus on the agency of motion.

In addition, the internet allows the agency of individual expression of its users. These identities are expressed through many social outlets found online such as e-mail, chatrooms, and MUDs. The ability to interact and perceive other social beings requires a spatial context for social actions. The inclusion of social actors in the internet creates social space, the second major method in which the internet creates presence.

Internet space is created by "motion" through encyclopedic data and through social actions. As a result, internet places are the websites, chatrooms, and multiple other spaces of practice. These are the implementations of internet space put to practice and can be understood in comparison to places in our everyday lives. For example, Amazon.com is a place for consumer practices much like a mall. It allows for browsing of products, buying, selling, as well as the posting of pictures and reviews of objects for sale. Activities not related to Amazon's commerce such as chatting with other visitors or posting information about topics unrelated to products are not allowed. These qualities are what distinguish it from other places on the internet and give it social relevance and cultural meaning.

The internet has strong connections with our existence as spatial beings. Constrained by time and space, our fundamental perceptions of existence must take these two elements into account. Our perception of the internet as space therefore aids us in understanding and using this technology in ways similar to our experiences in the world.

Similar to our perception of the urban areas we inhabit, our understanding of specific places on the internet are heavily influenced by physical, social, personal, and cultural factors. In particular, our experiences and ideological images of the internet influence our daily perception of internet places. A brief history of the internet's development as well as its perception in the popular imagination as found in literature, film, and marketing campaigns will aid in understanding the creation of places on the internet. Applying humanist geography's concepts to the *Google* search engine outlines a strategy for understanding the engine's unique qualities as a place on the internet.

4.1 Internet and Imagination

A spatial reality created by networked computers holds a particular place in our culture's imagination. Books such as *Neuromancer* (Gibson 1) and *Snow Crash* (Stephenson 3) as well as films such as *Tron* (Lisberger) are cultural works which take place in spaces like the internet. In addition, businesses eager to promote internet use deploy marketing messages, cyber-boosterism, promoting the internet as a desirable location. Close examination of these examples helps us understand the ideologies at play in our current perception of the internet.

An early work depicting the possible world inside computers is Disney's film *Tron*. Although not specifically about networked machines, *Tron* creates the vision of a computerized landscape based on computer graphics technologies of the time. These early images from the field of 3D graphics bear a striking resemblance to modernist utopian cities of the 60s and 70s. The modernist quest for an underlying order in nature met large scale realization in real world cities such as Brasilia, Brazil. The images in *Tron* are based heavily on the rules of Cartesian geometry. Figure 11 illustrates some of

the places in *Tron* which visually and conceptually echo modernist tendencies for order. The aesthetic of *Tron*'s computer space carries over into another important cultural work, cyberpunk fiction.

In *Tron,* computers offer new frontiers awaiting exploration and understanding, echoing themes found in early Disney films such as *20,000 Leagues Under the Sea* and the *Swiss Family Robinson*. However, the dangers in this world aren't giant squid or violent natives, but corporate controlled computer agent programs. The theme of the untamed frontier has played a major role in American culture since the days of westward expansion and manifest destiny. *Tron* presents the internet as a contemporary frontier awaiting colonization.

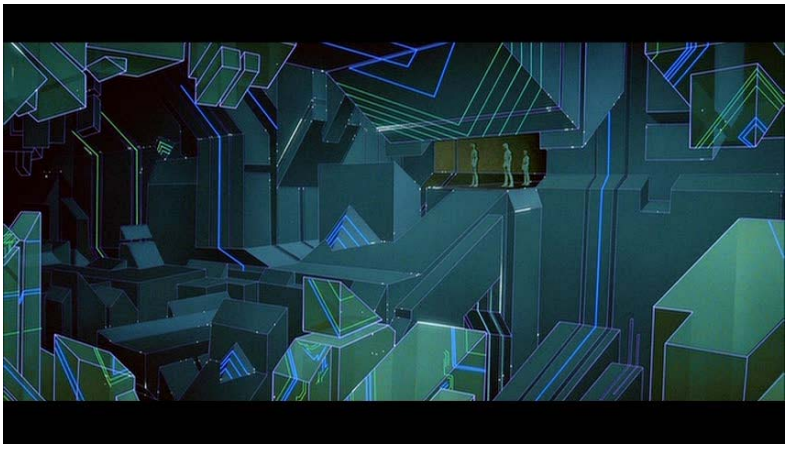


Figure 13 Still from *Tron*

Figure 14 Still from *Tron*

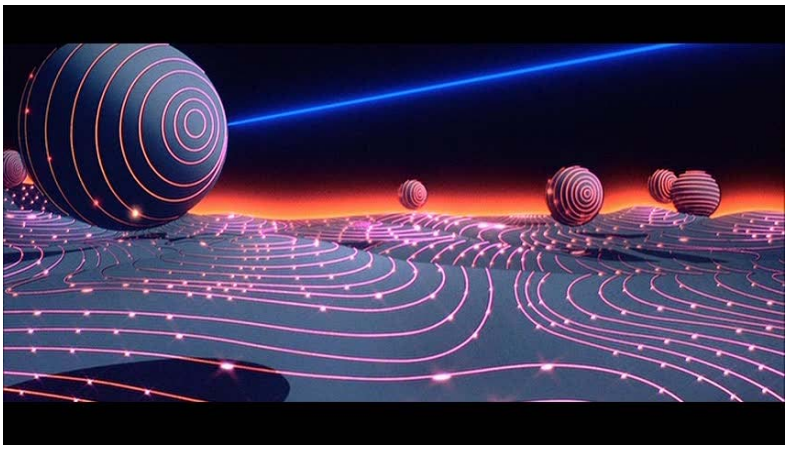


Figure 15 Still from *Tron*

The novels *Neuromancer* and *Snow Crash* present two protagonists and their adventures in futuristic computer places. Both cyberspace and the metaverse, the novels' respective representations of the online world, are geometric worlds ruled by multi-national corporations. However, they are dystopias when compared to *Tron*'s visions since they are not frontiers to be explored and tamed as much as they are threatening and require survival.

An important element of these presentations of computer spaces is the habitation of immaterial human existence. These cultural works exhibit human characters inhabiting non-material virtual worlds, although the character's posses very worldly, corporeal bodies. The idea of human life sustained without the need for physical bodies can be traced to religious ideals of a heavenly realm. This human desire to transcend bodily limits can therefore be a major factor in understanding a popular perception of the internet as a space (Wertheim 18).

Commercial imagery of the internet draws from similar transcendent desire as well as tourism. Microsoft's famous tagline 'Where do you want to go today?' offers the opportunity to travel to exotic destinations from a desktop computer. In such images, the internet is envisioned as a place for escapist desire. The tagline often placed over a clear sky suggesting boundless opportunities to visit stimulating destinations. Similarly, the world of Second Life offers the opportunity to experience "total freedom", as illustrated in figure 14. Making references to a cultural desire for escape and transcendence of corporeal constraints.

Figure 16 Stills from Promotional Video for *Second Life*

Films, novels, and advertisements all contribute to create a strong cultural perception of the internet as a unique space. These popular notions heavily influence the use and development of internet technologies. As a result, internet technological development seems to continue the tradition of design based on spatial metaphors. Critical awareness of these influences helps to explain the creation of place on the internet.

4.2 Internet in Practice

Real world use of the internet is similar to aspects of human experience as spatial beings. In particular, the practice of navigating a database of information and interactions with other social beings promotes the perception of the internet as a space. Developments in software technology can be analyzed to better understand how these actions have evolved over the internet's existence.

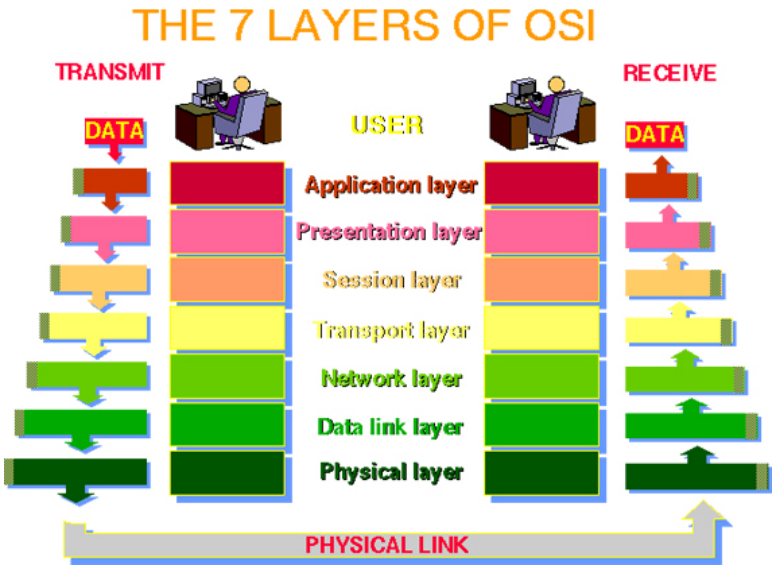


Figure 17 OSI Networking Diagram

Networking technology is explained with the use of the OSI 7-layer model (see figure 15). This graph classifies seven distinct layers of technology which function together to create the internet. The first level, known as the physical networking layer, consists of the physical medium by which electrical signals are transferred from one geographical location to the next. In practice, this layer includes things such as ethernet cables, telephone wires, and wireless signals.

On the other end is the application layer, the software implementation that users interact with. This can include software such as browsers, email clients, and other technologies which create the represented places of the internet. Between these two layers there are 5 levels of communication technologies and protocols which aid the functioning of networking as a whole. Although the top layer is most important for understanding the human perception of the places of the internet, it is important to note its dependency on the preceding technologies. Their collective functioning makes up contemporary networking technologies and thus create a sense of space and place for users. The websites, chat rooms, multi-user dungeons, and databases are the places represented on the internet.

4.2.1 Social Space

The use of networking technology for social practice is a continuous theme in the evolution of the internet. The transmission of email messages, the first application of the ARAPANET, set an early precedent for an eclectic social use. However, the perception of the internet as a place strongly surfaced with the advent of chat rooms where social interactions took place synchronously. Early chat rooms were IRC (Internet Relay Chat) as well as those found in the early days of America Online. Real time interactions

between people led to the popular perception of rooms as contexts for these exchanges. This popularity was creatively exploited in the development of MUDs (Multi-User Dungeons), where social interactions took place as part of fictional role playing games in virtual dungeons. MUDs pushed forward place creation as designers crafted compelling virtual environments as containers of their games' narrative.

With development of technology and growing speed of processors, these practices began to take place in visual 3D environments, where earlier attempts such as VRML proved unsuccessful. These environments (based on the same principles found in contemporary console games such as *GTA*) have strong connections to the ideals set forth from cultural works such as *Tron* and *Neuromancer*. The attempt to represent the internet visually as a physical space for social interaction is now realized in games such as *World of Warcraft* (Blizzard) and environments such as *Second Life* (LindenLabs). With growing bandwidth, the next steps in the development of these social spaces will be the inclusion of increasingly immersive technologies in a networked environment.

Another thread in the development of social internet space is the contemporary focus on social networking web sites. The internet as a social space is rapidly evolving and altering many facets of lived social life. What started as a medium for transmitting messages is now altering fundamental aspects of social practice such as courtship, friendship, and business. Such sites continue to push forward the internet as place metaphor. For example, MySpace provides its users a customizable personal web page for promoting themselves within their network.

The use and development of the internet for social interactions further promotes its status as a space. The various software developments which provide contexts for these

actions can therefore be understood as places. Chat rooms, MUDs, and web sites can be analyzed by their social qualities in much the same way as real world places.

4.2.2 Encyclopedic Space

Besides its social functions, the internet is a large database of networked information. The archiving and organization of this information is implemented on computers through metaphors of folders, files, and directories. The ability to navigate between separate computers on a network as well as through their directory structures provides the second fundamental quality which promotes the perception of the internet as a space. As Manovich states, ‘new media spaces are always spaces of navigation’ (Manovich 252).

Although directory navigation has been a quality of computing from the beginning, the networking of computers greatly expanded the scale and scope of navigable information. The need for the organization through common protocols was one of the early problems of the internet. In fact, the second application developed for the ARPANET after email was software based on FTP (File Transfer Protocol) technology. It wasn’t until the development of the World Wide Web that navigation of the internet was standardized. Developed by Tim Berners Lee, these innovations included the HTML language for representation of information as well as the WorldWideWeb browser. As a result, browsers became the dominant method of navigation of internet space, still in use today.

Browsers are culturally important artifacts due to their role of framing internet space. This role is also attributed to television, movies, and other screens which act as windows to alternate spaces. The tradition of framing is a Western visual practice which can be

traced back to the development of the Albertian window in painting. These windows are valuable objects because they provide access to other worlds.

The dual function of the browser as window and navigation tool to internet space came to a fever pitch in the late nineties with the ‘browser wars’ between Microsoft and Netscape. At stake was ownership of the window to a new frontier. Technically speaking, accessing information or communicating over the internet is not limited to the browser. Thus, the ‘browser wars’ were as much a struggle for cultural relevance and acceptance as much as they were for profit.

Figure 16 depicts the Netscape Navigator and Internet Explorer browsers. Note the logos: Netscape Navigator offering a helm in which to navigate interstellar space while Explorer depicts motion through a dynamic ring that appears to be in orbit. The affordances the browsers buttons allow are motion forward and backward as well as ‘search, and go back ‘home’.

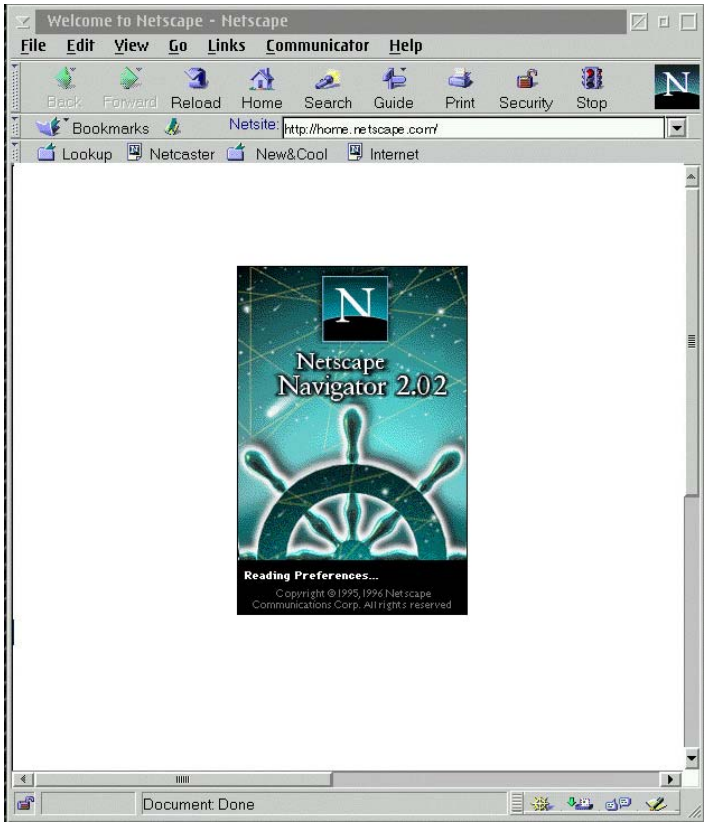


Figure 18 Netscape Navigator Browser

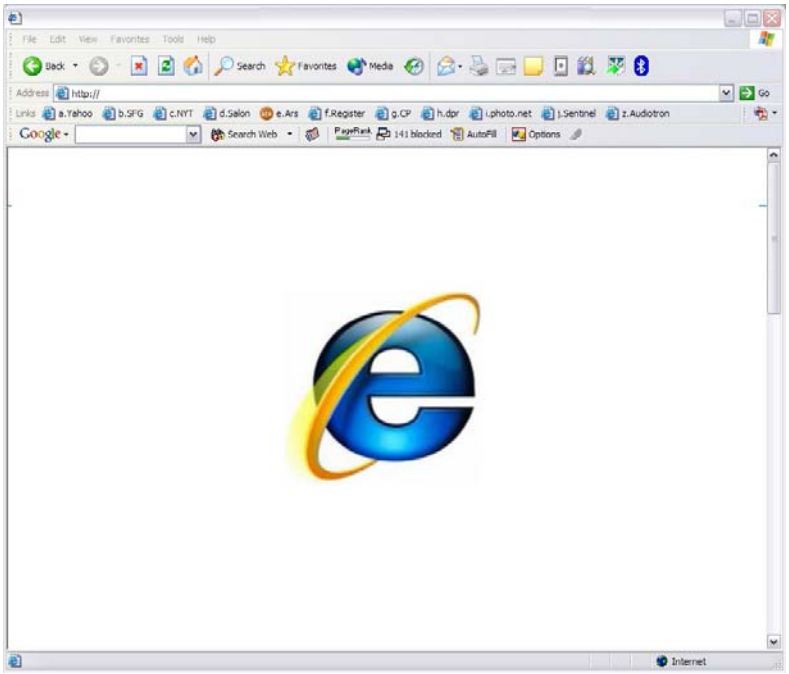


Figure 19 Internet Explorer Browser

The emergence of Information Architecture as a professional field continues to strengthen the connections between the development of real and virtual places. Analogies between web development and architecture further establish the use of the internet as conceptually spatial.

The combination of internet use and its imagery as portrayed in cultural works influences users' perceptions of the internet as a space. Furthermore, the mythologies created by cultural works such as *Tron* and *Neuromancer* heavily influence the design of technology, further creating a reality which mirrors and enforces this imagery. As a result, developments of internet places, both real and fictional, continually inform one another.

Distributed computing and proposals for a processing grid can alter internet use from predominantly based on the navigation of information and social experiences to more procedurally rich uses. If the overarching metaphor of the internet as a space persists within these developments, internet use would be significantly changed and the places of the internet would take on interesting characteristics. Some possibilities include the development of visually and computationally rich online worlds, many developed by independent internet users in ways similar to *Second Life*.

Encyclopedic navigation and social interaction provide the core elements of internet space. When combined with cultural, personal, and physical aspects, internet places emerge.

4.3 The Gallery of *Google*

Search technology is an important element of the encyclopedic internet. Searching and retrieving information from the gargantuan database poses important engineering problems. As a result, the web sites which house search portals are as important as browsers in the navigation of information space. If the internet is a place, then search portals are its cartographers.

Analysis of web sites as places engage cultural critique of design practices which have traditionally gone unquestioned and have largely been accepted as a objective. The internet in particular begs for critical understanding the practice of information navigation and access.

This practice of web and interface design, which Manovich calls a ‘new aesthetic challenge, something to explore rather than condemn’ (Manovich 330), is becoming the subject of considerable experimentation. Such a statement exposes the subjective nature of this design practice, making it a candidate for academic critique as well as artistic experimentation.

Cultural critique of existing internet places can be fundamental to encourage the development of experimental and alternative design practices. Analyzing the elements of place used in the *Google* search page aid in understanding how internet place is created

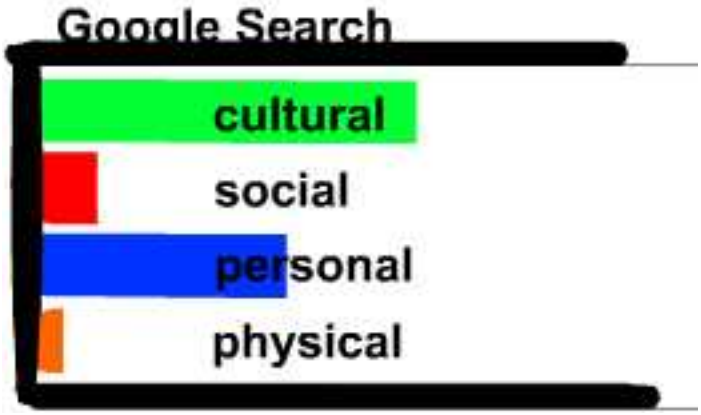


Figure 20 *Google*'s Elements of Place

The *Google* interface promotes a strong cultural and personal sense of place. Its cultural elements are rooted in cyber-utopian thinking and are heavily influenced by a minimalist gallery aesthetic developed in American during the cold war. These cultural elements have strong connections to the ideals found in popular utopian visions of the internet.

Search engines are the doors to most people's experiences in internet space. Since they are often used to navigate the internet, they conceptually frame user's experiences of internet places. As a result, elements of place found in the search engine pages affect the perception of the internet at large.

Figure 21 *Google* circa 1999 (top) & 2006 (bottom)

Google's expansive white background evokes a sense of cleanliness and purity (figure 18). The prominent elements of the *Google* logo, search field, and buttons have become iconic imagery because of the company's persistence in its design over the years. Very little has changed since its initial launch except for the addition of tabbed links and a one line advertisement. The visual hierarchy of the page places utmost importance on brand identification and simplicity.

The next elements noticed are the input field, Search and "I'm Feeling Luck" buttons. The interface requires a minimal amount of input, a short text entry, to yield potentially millions of results. The visual style is reiterated in this input requirement. A small amount of work requiring a low toll on a user's cognitive functions evokes simplicity. The search page is easy to on the eyes and easy to use. When compared to other portals filled with links and advertisement (as *Yahoo!'s* in figure 19), *Google's* search page certainly stands out.

Figure 22 *Yahoo!* circa 2006

The contrast between the *Google* and *Yahoo!* search pages illustrates the distinction between simplicity and clutter. *Yahoo!'s* page includes links to directories, news, entertainment, as well as advertisements. As a home page, this site presents the internet as a busy and littered space. On the other hand, *Google* offers few links, presenting the internet as orderly and organized.

The aesthetic of order has ideological connections with American gallery practice. The 'white cube' is used to evoke emotions of cleanliness and purity in a gallery setting. The role of the gallery is to purify works of art by de-contextualization and re-presenting them. The gallery is a place that transcends social, political, and commercial contexts. Similarly, *Google* creates a place on the internet for such an appreciation of information.

During the Cold War, exhibition practice of photography in America was transformed from displays signifying collective visions to one of emphasis the visions of individual artists (Phillips 29). Large scale displays containing numerous images were transformed into individually framed objects; each image surrounded by vast amounts of white wall space. This turn away from the collective power of image making to the celebration of the heroic individual is aligned with anti-communist ideologies. Google echoes this sentiment in their presentation of the singular entry field to the internet and expansive use of white space.

This ideology of gallery space has similarities to the modernist imagery found in fictional representation of internet space. Both are attempts at transcending physical aspects of the real world. Gallery space is designed to transcend worldly political realities while the internet spaces of *Tron* and *Neuromance*r are attempts at transcendence of corporeal

reality. *Google* uses visual techniques of the ‘white cube’ to create a place on the internet influenced by the utopias of internet space found in popular cultural works.

Figure 23 MoMA Exhibit, *The Family of Man,* 1955

Figure 24 MoMA Exhibit, Before Photography, 1981

The same ideologies play out in *Google's* mission statements, 'Don't be Evil' and 'Organize the Worlds Information'. While light hearted, these mantras play to existing social desires for meaning and order. If *Google* is not evil, then they must be good. This tongue-in-cheek comment, which contrasts *Google* with other inherently 'evil' corporations, distances them from questionable profit-seeking practices. The good/evil dichotomy reassures us of their proper intentions, and that they should be trusted.

The mantra, 'Organizing the world's information' evokes the notion of cleaning up the mess that is the current state of the internet. This modernist notion speaks to the desire for order. Again we are reminded of *Tron,* whose protagonist must clean up the internet of 'evil' corporate interest for the common good. If the internet is the new frontier, then *Google* is the brave cartographer colonizing this space and cleaning up the mess for mass use.

The place of *Google* on the internet is one that evokes rhetoric of order and transcendence similar to that found in contemporary art galleries as well as perceptions of the internet in the cultural imagination. Just like places in the real world, online places can be filled with ideological and political elements. These elements are part of the social and cultural aspects of place described in humanist geography and aid in the creation of a sense of place.

CHAPTER 5: MIXED REALITY

Many conventions for interacting with virtual worlds, such as those established by Nintendo for screen based 3D world navigation and Tim Berners Lee for internet browsing, are universally accepted interface practices. These conventions rely on a minimal amount of physical exertion, exclusively focusing on the use of hands and visual feedback for navigation.

Although appropriate for many uses use, these conventions continue to be put into question by artists, entertainment companies, and academic researchers eager to create new ways of experiencing digital environments. One recent development is the practice of Mixed Reality, the creation of digital artifacts which combine elements of virtual worlds with those found in the non-virtual world. MR artifacts combine elements from virtual worlds and user's physical environment.

Since MR isn't focused on completely removing a person from the physical world into the virtual one, it allows the inclusion numerous elements from a person's lived experience. Visual, haptic, auditory, and social elements are use in an MR application seeking to create a strong sense of place. *Pirates of the Caribbean*: *Battle for Buccaneer Gold* located in Disney World's Interactive theme park, Disney Quest in Orlando Florida. This MR environment creates a fictional place of a pirate ship at sea by immersing its guests in a 3D environment as well as engaging them as physical and social beings.

5.1 Immersion

Immersion, the physical submersion of the senses with a mediated environment, manifests itself in home and movie theaters as well as in arcades and galleries. The ubiquitous nature of such artifacts speaks to a strong cultural desire for mediated representation and transcendence of reality. Technological development of media is historically used to create spaces of illusion. As new media are developed, older forms of immersion become habitual and lose their power of presentation (Grau 153).

Immersive environments have predominantly focused on visual stimulus. Large scale Tromp fresco paintings from Roman times were some of the first such environments. Particularly interesting in early works were the use of architectural spaces to enhance the immersion in the paintings. For example, the Great Frieze in the Villa dei Misteri at Pompeii is painted on three walls and adapts to physical elements. The development of panoramas in the 1800s became a profitable and popular venture. These circular rooms depicted 360 degree representation of natural scenes. Visitors would pay a fee to be able to spend time within these rooms of immersion. The development of film technology quickly made panoramas irrelevant and the creation of movie theaters today provides our contemporary fulfillment for visual immersion. Lesser known developments include the Cinerama film theaters of the 1960s which used three projections on a 180 degree screen and today's large scale IMAX theaters.

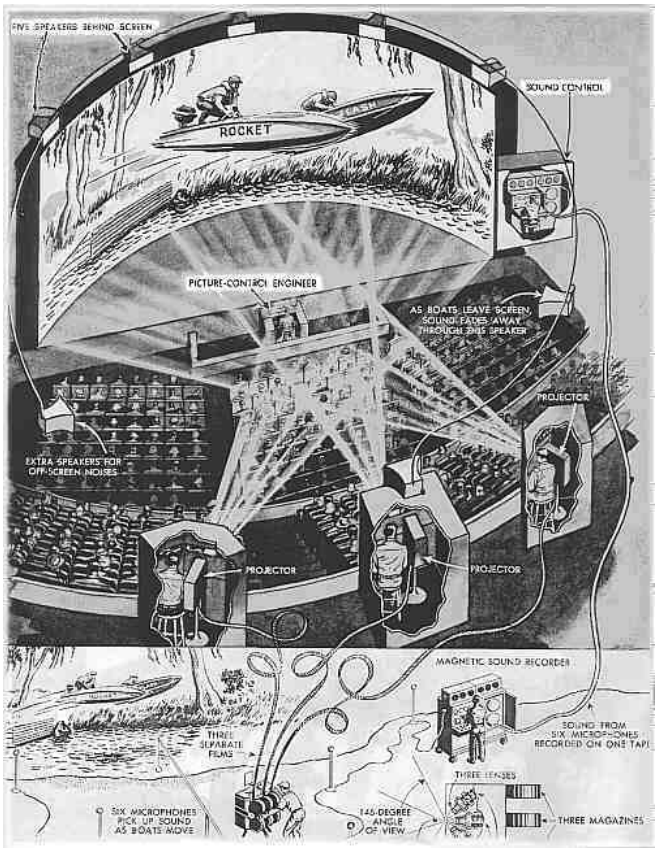


Figure 25 Cinerama

Figure 26 IMAX Theater

Another interesting pattern in the history of immersion which has hindered its development is the use of large scale and expensive elements. The lack of portability of tromp l'oeil have made them difficult to maintain and preserve. Few panoramas exist today because of the challenges in storing and maintaining entire rooms of immersion. Similarly, VR caves and HMDs are expensive devices with little current potential for consumer opportunities and hence limited funding. Immersive environments have a tradition of real-world challenges.

Immersive practices can be understood as cultural role-play where the environment provides a physical setting for people to act out desires of transcendence. In such a scenario, presence would not be attributed to the physical qualities an immersive environment provides but to the willingness of the active participation of belief. Cultural and personal elements of an immersive environment are as important as its illusionist characteristics. These practices are put to practice in Disney's game, *Pirates of the Caribbean*.

The dream of completely immersive VR stands alongside the dream of a human-like Artificial Intelligence as unrealized goals of the digital age. Its realization, though plausible, remains an elusive goal. This dream, however, offers us opportunity to expose ideological values which can inform the design of digital environments.

Visual immersion is but one piece of the puzzle in creating presence for digital media. Our cultural desire for such experiences can be realized through the inclusion of personal, social, cultural as well as physical immersive elements. These are the same elements which constitute place as defined in humanist geography.

5.2 Physical Controllers and Props

Agency is a core element of digital media. The ability to make meaningful changes on a mediated place greatly enhances its presence. The physical input mechanisms that enable this agency determine the possible actions and greatly influence the sense of presence. In the case of a 3D console game, the controller, with its numerous digital and analog inputs, determines what navigation and participation will be allowed in the virtual environment. Similarly, the mouse and keyboard determine interactions with internet space.

Figure 27 Playstation2 Dualshock Controller

These hardware interfaces provide a high level of abstraction to promote general use of their platforms. The keyboard and mouse combo is a successful implementation as it allows the manipulation of language symbols and an accurate pointer for manipulating visual symbols in a desktop environment. These affordances determine the way internet space is experienced. The general characteristics of the console controller, although distinct from platform to platform, allows for a range navigation and action in 3D virtual environments. These are the contemporary standards in interfaces to digital environments. The designs of controllers play an important role in the promotion of physical place in a virtual environment.

5.2.1 Bodies in Place

As we inhabit places in our lives we adapt our bodies for appropriate behavior. Sitting in a classroom, exercising in a gym, and working in an office all require a proper posture and use of the body. As a result, we sense our bodies: muscles positions and bone structures differently in different places. This sense, also known as proprioception (Massumi 58) plays an important role in our sense of presence in the world and in specific places. For example, sitting and writing on a desk may remind one of time spent in a classroom because of the similar posture and movements expressed.

Figure 28 Stills of *Just* Video

This still from the Radiohead video, *Just* (Thraves) strongly connects the ideas of body positioning and place. A businessman lays down in the middle of a busy downtown street. Other pedestrians take notice and surround him repeatedly asking him if he is alright. Although he replies that he is just fine and wishes to be left alone, a crowd continues to grow. The video exposes the inappropriate behavior of laying down on a public street, and the public discord which results when one person decides to break the street's social code. This video is influenced by the work of the Situationist Internationanale, a French group of artists and philosophers in the mid-1900s who sought to alter places with unique and often irreverent social actions.

Inclusion of proprioception to the existing 5 senses model opens up possibilities for understanding how place is physically experienced. This understanding can inform the design of places and help in the promotion of presence. For example, research studies have shown that participants experience stronger presence when navigating an urban virtual environment by walking in place instead of through a traditional joystick controller (Slater, Usoh and Steed 201). The use of the body and its sense of proprioception play a major part in place presence.

Alternative controllers have been developed which seek to engage the sense of proprioception. Existing arcades and home console games exhibit numerous such games with physical controllers that allow players to skate, fish, drive, and shoot in ways which mimic real life. Often, the physical activity recreated has strong mediated cultural values. Shooting a gun like a cowboy in a country western movie or strumming a guitar like a rock star in a music video are existing manifestations of this. Playing these games engages a player's sense of proprioception and enhances the experience. The use of

physical interfaces can further enhance the sense of presence in virtual environments by connecting to real world actions and extending the use of the human body.

5.3 Social Action

Place creation is a complex social, cultural, and political process. In their daily functions, places are defined by the actions and behaviors of the people that inhabit them. In a cyclical relationship, behavior determines place which determines behavior. When a new visitor enters a place, they are taught the nuances of proper behavior by existing actors. The inclusion of social actors in place is an important part of the experience of presence.

Social creation of real world places is similar to the ways we have looked at the notions of social space in relation to the internet. The social places online: chat rooms, bulletin boards/forums, social networks, etc. are predominantly marked by mediated communication. Email, text messages, and video conferencing provide relatively low-bandwidth for transfer of information, although enough is shared by people to create popular internet places that exist today. In contrast, embodied communication with spoken and body language provides high bandwidth communication not yet available through technology. The increasing amounts of communication technologies available today have done little to change the need for travel. Few businesses will negotiate important deals with today's video conferencing technology and few families will do with mediated presence with each other during important holidays.

Mixed Reality artifacts are not just solitary experiences. The inclusion of social actors in an MR experience can greatly enhance and promote place. Like a theater play, several people can enter the magic circle of a place representation in MR. As in everyday places

such as cafes, schools, and bus stops; their actions can promote presence to each other in a positive feedback loop.

The fields of CSCW and CSCP, Computer Supported Collaborative Work and Play respectively, seek to understand the ways that co-located people collaborate when interfacing with digital systems. If such a system is a representation of a place, then the social and embodied inclusion of actors can promote a greater sense of presence.

The Disney Quest MR game, *Pirates of the Caribbean: Buccaneer Gold* provides a highly immersive, physically engaging, and socially experienced virtual environment which successfully combines immersion, physically controllers, and social action to create place. This game is exemplary of larger shifts happening in the relationship between lived experience and media.

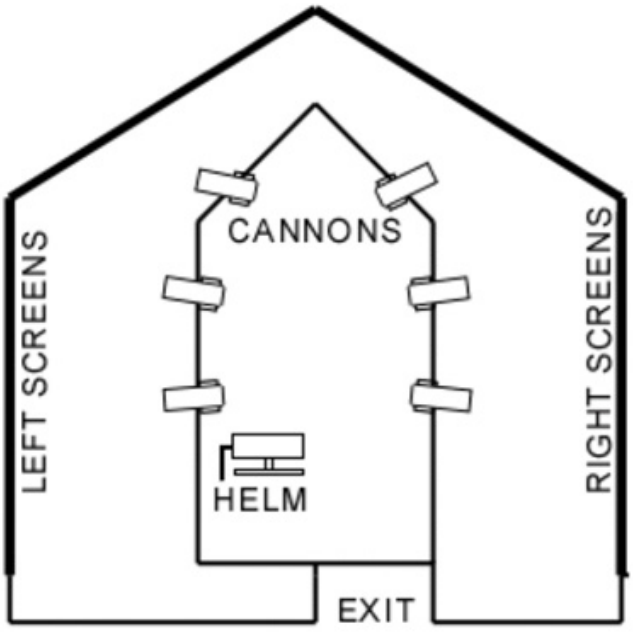
5.4 Mixing Realities in *Pirates of the Caribbean: Battle for Buccaneer Gold*

Figure 29 *Pirate's* Elements of Place

Walt Disney Imagineering's (WDI) MR theme park experience/game, *Pirates of the Caribbean: Battle for Buccaneer Gold* promotes a sense of place in its immersive pirate ship and seascape by engaging visitors with its physical controllers as well as encouraging play acting between them. In addition, *Pirates* builds on the legacy of the original Walt Disney Land ride as well as its filmic rendition to promote presence in the represented place through its existing perception in popular imagination. As a result, *Pirates* provides a great example of a representation of place in Mixed Reality as it can function in several levels.

5.4.1 The Experience

As all rides and games found in the Disney theme parks, *Pirates* is designed with very specific constraints. Mainly they need to provide a short and unique experience so that a large number of visitors can rapidly move through them and provide experiences not found outside the parks. Compared to existing attractions which are built on large tracts of land available in the parks, Disney Quest which houses *Pirates,* was initially designed as an alternative arcade franchise to be deployed in locations across the country. As a result, the constraint of the size of physical space was introduced.



Layout of ship and screens

Figure 30 Arial Layout of Ship and Screens, *Pirates*

Pirates is housed in several small rooms to allow for simultaneous play of different groups. Inside each room is a recreated section of a pirate ship, with 6 small scale cannons are placed on the sides and a helm on the rear left. 4 large scale projections screens surround the ship.

The queue area for *Pirates* is filled will pirate imagery and sounds which prime the visitors for their upcoming adventure. This priming is gradually increased as a group of visitors get closer to their turn and peaks with the ability to view current players through glass doors immediately before their turn. Next to these doors maps of the virtual ocean they will navigate are hung. These elements provide assurance and excitement,

encouraging visitors to play act therefore promoting the presence they will experience once in the rooms.

Inside the room, highly immersive elements include large screens, surround sound, and the faux terrain of the ship, cannons, and helm. Once inside, visitors are provided stereo glasses which trick their eyes and brains to create the illusion of 3D space as projected on the 4 screens. The size of the screens grows beyond the peripheral vision of most visitors when standing in different positions, erasing their frame and immersing them in the sea landscape. Audio of the scene is projected from several speakers surrounding the visitors. The boat, cannons, and helm act as faux terrain objects which provide further immersion.

The visual representations on the screens are based on 3D imagery like most contemporary video games. The tradition of the *Pirates of the Caribbean* franchise as found in the early Walt Disney Land ride and more contemporary movie, provides visual and aesthetic cues to promote immersion in this fantastical universe that visitors are familiar with. Thus seascape and islands represented fit the visitor's expectations of what a pirate landscape is, further promoting presence.

Figure 31 Pirates in Action

The faux terrain is not just cosmetic, the cannons and the helm are the physical controllers used to interface with the game. Use of the interfaces is clear because they are culturally understood objects that function much as one would expect. The helm is used just like a car steering wheel and is used to direct the camera's positioning in the virtual environment, mimicking the perspective from inside the boat. The cannons have strings attached to their backs. Pulling on a string compresses a spring which makes a sound when released and creates a cannonball to appear in the virtual environment directly in front of the cannon, providing immediate feedback. The cannons are small and can be rotated easily for aiming. These physical controllers are props which are used by guests to physically engage in the play acting of the pirate adventure at sea (Mine 15).

Several elements of *Pirates* encourage players to act out their roles as pirates thus becoming props for each other. The boat accommodates up to 7 people to play, enough to fit the standard American family. By using a room with 4 screens instead of Head Mounted Displays (HMD) as found in other games at Disney Quest, the experience

encourages vocal as well as physical communication between players. The game design and layout of the boat encourages communication through the need to collaborate to successfully navigate the boat and defeat other pirate ships (Schell and Shochet 7). Seldom will 7 people use the game at once, leaving cannons unmanned. Game play is designed to require movement of the players between cannons. Placing the game in a room behind closed doors encourages performance-shy players to engage in the play. Similarly, the 3D goggles and darkened environment help to alter the visitor's vision. The projector screens and other room elements which provide framing are difficult to detect, further creating the illusion of immersion. The goggles may also act as a mask, altering the faces of the other players and promoting play acting.

Pirates represents place and promotes presence by engaging players on several levels. The dynamic elements of immersion, interaction, and social action combine to provide a Mixed Reality environment which strongly promotes place in ways akin to people's lived experiences.

5.4.2 Between Realities

The game and Disney's *Pirates of the Caribbean* franchise are great examples that expose a contemporary trend in place representation and mediation. *Pirates* functions as a Mixed Reality digital artifact existing between a representation of a virtual space and an intervention of a real space. Concurrently, at the Disney theme parks the original pirates ride which influenced a move forty years later is being revamped to include characters from the film. This exemplifies a cross pollination of media into the influence on daily life

In Re-mediation, Bolter and Grusin expose the ways in which media dialogically influence each other. A similar process is taking place between the representation and the experiences of place. *Pirates* grows out of the frame into the world, creating a real place made up of virtual and real elements. Similarly, game consoles expand televisual and film space into people's living rooms. As a result, our perception of place which includes physical, social, as well personal elements is increasingly reliant on the culturally mediated worlds from books, films, television.

CHAPTER 6: CONCLUSION

Connections between digital media artifacts and place as explained in the field of humanist geography provide an opportunity to re-asses contemporary definitions and methodologies of presence. These connections are found in the ways that physical, personal, cultural, and social elements emerge when digital media artifacts are experienced.

Analyzing the way a video game, internet site, and Mixed Reality environment implement the four elements of place found in humanist geography provides opportunities for the re-definition of presence. The breadth of artifacts selected allows a wide understanding of this concept as found in separate domains of digital media practice. Studying how place is created in these distinct domains prepares designers for the possibilities of place creation as a result of their convergence. The Some existing and potential domains include: online video games (*World or War Craft*, *Second Life*) and MR environments as well as alternate controllers for home consoles (*Guitar Hero*, *Donkey Konga*).

The artifacts in this study have all received popular and critical reception and continue to have greater cultural effects beyond the field of computing. *GTA: Vice City*, is one of the best selling video games in recent years. The *GTA* franchise has prompted countless cloning in the marketplace due to the unique experiences *Liberty City*, *Vice City*, and *San Andreas* provides. In addition, it has garnered several awards including a Designer of the Year award from the Design Museum.

Similarly*, Google* continues to alter the use of the internet with their search technology. Recently, *Google* is making strides to increase the internet's encyclopedic capacities by scanning all published books, providing maps, as well as providing access to user-generated videos. Use of their technologies becomes more ubiquitous by the day.

Finally, *Pirates of the Caribbean: Hunt for Buccaneer Gold* has set a precedent for the use of immersive technologies in theme parks. Disney's focus on location based entertainment requires it to continually design new experiences which may find themselves in local arcades, theaters, galleries, and museums throughout the world. It has received critical reception with its reception of the THEA (Themed Entertainment Association) Outstanding Achievement Award.

6.1 Final Statement

Digital media artifacts represent and realize spatial environments. Enhancing our understanding of presence through the work of humanist geography can inform the design of richer and more engaging places in the digital medium. When designing artifacts, inclusion of physical, social, personal, and cultural elements can be deployed to achieve a sense of place. Desired results can be accomplished by an awareness of the interplay between these four elements. Maximizing the use of all of these elements does not guarantee the emergence of a strong sense of place. Instead, when clear design goals are understood in relationship to these elements, their proper deployment will be evident.

Analyzing existing artifacts as informed by Tuan's definition of place allows for new methodologies for understanding the spatial affordances of digital media and presence

research. In addition, exploring the ways place is created in traditional media can further provide guidance in applying the ideas of humanist geography to the digital realm.

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